

1 energy systems, and there are really tremendous  
2 benefits for our energy system of low embedded  
3 energy water supply options like water reuse.

4 So I'm pleased to see this kind of  
5 research. Thank you.

6 COMMISSIONER ROSENFELD: Again, on  
7 behalf of the R&D Committee, and with thanks to  
8 the staff, I move the item.

9 COMMISSIONER DOUGLAS: I second the  
10 item.

11 CHAIRPERSON PFANNENSTIEL: All in favor?

12 (Ayes.)

13 CHAIRPERSON PFANNENSTIEL: Thank you.

14 MR. ROGGENSACK: Thank you.

15 CHAIRPERSON PFANNENSTIEL: Item 10,  
16 possible approval of an initial study and adoption  
17 of a proposed negative declaration for the  
18 environmental analysis for the 2008 building  
19 energy efficiency standards. Good morning, Mr.  
20 Hudler.

21 MR. HUDLER: Good morning,  
22 Commissioners. As part of the California  
23 Environmental Quality Act regulations developments  
24 for adoption of regulations such as the 2008  
25 regulations must be reviewed for potential

1 significant negative environmental impacts.

2 As part of the 2008 adoption process  
3 staff did undertake an initial study and prepared  
4 a statement of negative declaration in a draft  
5 report. And sent that report out for comments for  
6 a 30-day period, which we have not received any  
7 comments.

8 Basically the findings of that report  
9 were that the cumulative effects of the standards  
10 would be very positive. In fact, a significant  
11 reduction in air emissions. And, of course, there  
12 are those benefits of the energy savings in which  
13 per-year of construction there would be an  
14 estimated 549 gigawatt hours per year of  
15 electricity, 18 million therms of natural gas and  
16 29 megawatts of electricity demand reduction.

17 Staff has made some minor modifications  
18 in the report to be in line with changes that were  
19 made to the standards. And staff requests the  
20 Commission's approval of the negative dec initial  
21 study.

22 CHAIRPERSON PFANNENSTIEL: Thank you.  
23 We do have one person who'd like to speak on this  
24 item, although the card said only if an issue  
25 arises. I'm not sure what that means. Now, okay,

1 does not want to speak at this time.

2 Given that, is there a motion to adopt  
3 the negative declaration or are there comments?

4 COMMISSIONER BYRON: May I ask a  
5 question?

6 CHAIRPERSON PFANNENSTIEL: Of course.

7 COMMISSIONER BYRON: Having not been  
8 through this process before, of standards, perhaps  
9 Commissioner Rosenfeld has been through it more  
10 than once, but is it typical, or is it required of  
11 us to do a neg dec, negative declaration on  
12 standards?

13 MR. HUDLER: Yes, for anything within  
14 the appliance regulations or the building  
15 standards, any regulatory action requires a review  
16 of the potential environmental impacts.

17 COMMISSIONER BYRON: Okay, I should  
18 probably know that.

19 I also noted that in the back of the  
20 appendix A on the neg dec, there were just a  
21 couple of items that, you know, didn't fall in the  
22 no-impact area, they were in the less-than  
23 significant. And one of them was indoor air  
24 quality.

25 Was there any concern raised by the Air

1 Resources Board or anything?

2 MR. HUDLER: No. Specific to those  
3 comments we received no comments on that at all.

4 COMMISSIONER BYRON: Okay. Thank you.

5 COMMISSIONER ROSENFELD: I'd like to  
6 make a comment and compliment the staff. It's  
7 unfortunate that this is just called a negative  
8 declaration.

9 (Laughter.)

10 COMMISSIONER ROSENFELD: You know, over  
11 the next -- Rob just said megawatts per year. I  
12 want to emphasize that that's the first year we're  
13 going to save 129 --

14 MR. HUDLER: Right.

15 COMMISSIONER ROSENFELD: -- megawatts.  
16 But, of course, we're going to have this standard  
17 in place, or a tighter standard, for decades. So  
18 I would sooner say per decade it's 1.3 gigawatts.  
19 And that's not just a negative declaration, that's  
20 darned good news.

21 So, with that, I'd like to move the  
22 item.

23 CHAIRPERSON PFANNENSTIEL: Before we get  
24 a second I'd also like to say I thought that the  
25 discussion, the analysis was very well done and

1 very clear.

2 I thought reading through the neg dec  
3 document sort of put a lot of what we've been  
4 working on in context. And so I thought it was  
5 quite well done. So, thank you.

6 The item has been moved. Is there a  
7 second?

8 COMMISSIONER BYRON: Second.

9 CHAIRPERSON PFANNENSTIEL: Further  
10 questions?

11 All in favor?

12 (Ayes.)

13 CHAIRPERSON PFANNENSTIEL: The negative  
14 dec is approved; thank you.

15 MR. HUDLER: Thank you.

16 CHAIRPERSON PFANNENSTIEL: Then we get  
17 to the main item, which is item 11, which is the  
18 2008 building energy efficiency standards.  
19 Possible adoption of the 2008 building energy  
20 efficiency standards and supporting documents  
21 published as express terms of proposed  
22 regulations. Good morning.

23 MR. SHIRAKH: Good morning,  
24 Commissioners. I'm Mazi Shirakh; I'm the Project  
25 Manager for the 2008 update of the standards. To

1 my right is Bill Pennington; he's the Office  
2 Manager for the building and appliances office.

3 I have a brief statement I'd like to  
4 read. The 2008 update of the building energy  
5 efficiency standards, which got underway in July  
6 of 2005, includes dozens of new features and  
7 improvements to the existing 2005 code.

8 The documents that are set for possible  
9 adoption today include the standards document, the  
10 residential and nonresidential ACM manuals, and  
11 the reference appendices.

12 Some of the more significant highlights  
13 of the improvements include, number one, active  
14 coordination of the standards with New Solar Homes  
15 Partnership, NSHP; calculation tools for field  
16 verification protocols; recognition of the NSHP  
17 participation as an alternative way to comply with  
18 the standards.

19 New cool roof requirements for  
20 residential and nonresidential steep sloped roofs;  
21 new residential high-performance fenestration  
22 requirements; upgraded swimming pool, spa and  
23 water heating requirements.

24 Updated requirements for residential air  
25 conditioning, refrigerant charge verification

1 procedures; proper air flow; thermostatic  
2 expansion valve treatment.

3 Introduction of electronic filing  
4 requirements for recordkeeping to enhance future  
5 compliance efforts; creation of referenced  
6 appendices as a support document for all standard  
7 related documents.

8 Improvements to the nonresidential  
9 indoor/outdoor sign and daylighting requirements;  
10 improvement to NFRC's site-built fenestration  
11 requirement; and the new compliance method  
12 approach, or CMA, which vastly simplifies  
13 compliance with the standards requirements.

14 And finally, the new envelope lighting  
15 and mechanical requirements for refrigerated  
16 warehouses, which is a new feature in this code.

17 For this cycle of standards staff  
18 conducted 16 days of public workshops and  
19 hearings. And received and responded to thousands  
20 of public comments. The results are significant  
21 improvements over the 2005 standards, with an  
22 anticipated 17 percent savings in the residential  
23 sector, and 7 percent in the nonres sector.

24 These savings are significant tools in  
25 meeting policy directives set by the Commission,

1 the Governor and the Legislature, including the  
2 IEPR, Energy Action Plan, Green Buildings  
3 Initiative, and Climate Action Initiative.

4 The 2008 standards team included the  
5 Commission Staff and our consultants, Pacific Gas  
6 and Electric, Southern California Edison, San  
7 Diego Gas and Electric and their consultant teams.

8 We would like to acknowledge the efforts  
9 of many organizations and individuals who have  
10 helped us during this process, including CALBO,  
11 which represents the building officials, CBIA and  
12 ConSol, CABEC, which represents the energy  
13 consultants, NRDC, organization representing the  
14 roofing industry, tile, metal and asphalt  
15 shingles, California Sign Association and other  
16 individuals and organizations who provided  
17 comments over the past three years.

18 Finally, the staff would like to  
19 acknowledge the contribution of our late  
20 colleague, Jon Leber, who passed away in February  
21 of this year after a three-and-a-half-year battle  
22 with leukemia. Jon was a brilliant engineer who  
23 devoted 30 years to the building and appliance  
24 standards. He was a major influence in the Title  
25 24 standards being the most energy efficient

1 building code in the country and a model for  
2 others to follow.

3 For the 2008 standards Jon worked on  
4 making improvements to the technical details in  
5 the joint appendices until literally days before  
6 he passed away in February. He was the ultimate  
7 public servant; and the staff of the energy  
8 efficiency and renewables division would like to  
9 dedicate the adoption of the 2008 standards to Jon  
10 Leber.

11 So, with that, I'll be glad to take any  
12 questions.

13 CHAIRPERSON PFANNENSTIEL: Thank you,  
14 Mazi. I think there's some discussion that we  
15 could have, but let me turn to the blue cards. We  
16 have a number of parties here who would like to  
17 speak, and I think we should hear from them, and  
18 then we'll see if there's further discussion on  
19 the dais.

20 Start with William Callahan, Executive  
21 Director of Associated Roofing Contractors. Mr.  
22 Callahan.

23 MR. CALLAHAN: Good morning. Bill  
24 Callahan, Associated Roofing Contractors. I'll be  
25 brief both for the sake of my laryngitis and for

1       your sanity.

2               I would like to agree with Mazi on one  
3       thing, the proposed 2008 code is much improved  
4       over 2005. There were a lot of shortcomings, from  
5       our point of view, in that code. A lot of them  
6       have been addressed.

7               At the same time, the new code cuts a  
8       much wider swath through our industry. And it  
9       covers just about every type of roofing out there  
10      now, not simply low-slope nonresidential.

11              Now, the reach of the code has been  
12      greatly extended. Staff have been willing to work  
13      with us to craft a number of exceptions that help  
14      account for some of the conditions we actually  
15      encounter in the field.

16              Models are simulations of the real  
17      world. They don't account for everything that  
18      people actually encounter when they're on the wide  
19      variety of roofs that exist in the world.

20              So, from our point of view, the code is  
21      a lot more reasonable in 2008 than it was in 2005.  
22      At the same time, it's also a lot more complex.  
23      It's going to be very difficult for people to  
24      understand it, comprehend it and comply with it.  
25      It's going to be a big challenge to make

1 compliance manuals that turn this code into  
2 something that the average roofing contractor or  
3 building official or building owner can understand  
4 and work with.

5 We've been assured by CEC Staff that  
6 they'll continue to allow us to help them meet  
7 that challenge. And we do appreciate and thank  
8 them for that opportunity.

9 Thank you.

10 CHAIRPERSON PFANNENSTIEL: Thank you,  
11 Mr. Callahan. We thank you; we appreciate your  
12 comments. And we will also work with the staff to  
13 make sure that they have compliance manuals that  
14 meet that responsibility.

15 Marty Dunhill, Enterprise Roofing  
16 Service.

17 MS. DUNHAM: Hi, I'm Marty Dunham from  
18 Enterprise Roofing Service. I put together at  
19 midnight last night about a three-minute  
20 PowerPoint, that if you'll indulge me I would like  
21 to present in addition to my very brief comments.

22 First of all I wanted to thank both Mazi  
23 and Payam for including the contracting community  
24 in -- or listening to the contracting community.  
25 We asked for that in the last public hearing and

1 we were rewarded with some good attention. And as  
2 you know, they've been working feverishly to meet  
3 deadlines and present this modified Title 24 code.

4 Essentially what I'd like to say in  
5 addition to that is that, as Bill touched on, a  
6 model is a model. And I've been 30 years in the  
7 roofing business. I'm accused of not being green  
8 enough because I see many problems that are  
9 sometimes encountered in the field which present  
10 challenges for the roofing contractor.

11 And I was concerned when I went online  
12 yesterday and saw that Carlisle had sent a letter  
13 in that stated, gosh, you know, an industry  
14 standard is eight-inch base flashing and turnup  
15 around mechanical equipment and walls. And you  
16 just should make everybody do it regardless.

17 Well, I'd like to just provide this  
18 slide show, it's only eight slides, as information  
19 to kind of show people some real world conditions.  
20 The fact of the matter is that in the industrial/  
21 commercial sector where I work, building owners  
22 have to provide a watertight structure. Food and  
23 shelter are about as basic as you can get. Many  
24 of these institutions have to provide -- have zero  
25 tolerance for leakage, whether it's a

1 pharmaceutical manufacturing plant, a laboratory,  
2 datacenter, a medical office building other than a  
3 hospital, they cannot afford to have leakage.

4 In some instances they also cannot  
5 afford to spend money to pay a plumber, an  
6 electrician, an insulator, and HVAC mechanic to  
7 modify all the duct work and utilities that are  
8 related to mechanical equipment that's mounted on  
9 the roof.

10 So, in that vein I'm going to hop to the  
11 other podium and just give you a quick overview.

12 (Pause.)

13 MS. DUNHAM: I say real world tongue-in-  
14 cheek, but this is a roof that I looked at a  
15 couple weeks ago. It's a datacenter for a large  
16 hospital institution. And you might say, where's  
17 the roof. Well, it's under all that equipment.  
18 And as you can see, it's quite a challenge to  
19 figure out how to put a roof on it.

20 So some of the exemptions that are so --  
21 you know, I know there's an exemption for  
22 hospitals, per se, but that really doesn't address  
23 places like datacenters and pharmaceutical  
24 manufacturing plants, refineries and many other  
25 instances where there's a phenomenal amount of

1 equipment on the roof.

2 So this is just the kind of roof --  
3 certainly there's a spectrum. Some are wide open,  
4 but this isn't your average model of a roof, of  
5 what a roof may look like.

6 The top slide here shows a piece of  
7 mechanical equipment, but what I'm really trying  
8 to call your attention to is that behind the  
9 mechanical equipment there's a large wall that  
10 goes up to an upper roof level. And at the base  
11 of that wall there's a six-inch base flashing.

12 If we were to add insulation then we  
13 would have to cut the stucco and raise that  
14 reglet. And as you see at the bottom of the  
15 slide, there's a phenomenal amount of conduit  
16 going into the building that would also have to be  
17 rerouted and raised in order to increase the  
18 elevation of the roof termination at the wall, as  
19 needed to make it watertight. So that's one of  
20 the situations where we have a challenge.

21 Down below there's an equipment screen  
22 sleeper that's about an inch above the roof; and a  
23 duct that's about six inches above the roof. And  
24 if you add an inch of insulation all of a sudden  
25 your base flashing heights are marginal. The duct

1 has to be completely reworked; you'd have to make  
2 provisions to go around the braces, which are  
3 difficult to make watertight, as they're designed.

4 Here in the foreground you see a conduit  
5 which luckily has plenty of height if you were to  
6 add an inch or two of insulation. But behind it,  
7 you can see that there's a sleeper upon which  
8 steam lines and 480 volt conduits run.

9 There's 25 of those. And they're about  
10 six inches above the roof. They're already  
11 marginal; very difficult to add any insulation  
12 without having to rework all of those sleepers  
13 beneath all the electrical lines and steam lines  
14 there.

15 So the bottom photo shows a gasline.  
16 And this gasline is about -- if you can see my  
17 tape measure -- about three inches above the  
18 surface of the roof. If we were to add insulation  
19 there it really would be almost buried in the  
20 roof.

21 So that gasline, you have to not just to  
22 be a roofer, but you have to call a plumber in to  
23 bleed the gas, you know, to turn the gas off,  
24 bleed the line, cut the pipe, raise all of the  
25 piping, and then reconnect it. And this is a

1 facility that has -- that can't be shut down.

2 So, what do you do in a situation like  
3 that. And I understand how difficult it is to  
4 come up with exceptions for all these situations.  
5 But there are thousands of them.

6 Here is another situation where I have a  
7 conduit that feeds a large HVAC unit on the roof.  
8 It's about three or four inches above the surface  
9 of the roof. So, if insulation were added here,  
10 absolutely this conduit, regardless, should be  
11 raised. However, in some instances it's possible  
12 to make it watertight without raising it.  
13 Certainly to meet all the manufacturer's  
14 requirements it should be raised.

15 But it's over a datacenter; and you know  
16 how computers generate heat. Those air  
17 conditioners have to stay on at all times, 24/7.  
18 So, now I have to rent temporary air conditioning  
19 to put inside the building so that I can  
20 disconnect this conduit, raise it, hire an  
21 electrician, re-pull electrical wires in some  
22 instances, and reconnect the equipment. Modify  
23 the duct work that goes to the equipment, et  
24 cetera. So you know of get an idea.

25 The picture at the bottom is actually

1 the other side of this massive unit that's about  
2 12-feet-by-12-feet, and weighs several tons. The  
3 platform upon which it rests is about eight inches  
4 high. And, again, if we added insulation there it  
5 would be difficult. We'd have to crane the unit  
6 off the roof essentially, in addition to doing the  
7 electrical modifications that we've shown above.

8 Here is an electrical junction box  
9 that's six inches off the roof. A phenomenal  
10 amount of conduit going through this, and there  
11 may be some telecommunications lines, you know,  
12 also in a similar configuration on this roof.

13 I don't know how we're going to handle  
14 that. But we have to figure out something. And  
15 if we have to add insulation, the challenge is  
16 made even greater.

17 The slide at the bottom shows two  
18 conduits. One of them comes out of the roof and  
19 bends and goes toward the upper left-hand corner.  
20 It's four inches above the roof where it makes  
21 that turn. The other one is about six inches  
22 above the roof.

23 And if you add insulation those heights  
24 do not meet the manufacturer's eight-inch  
25 requirement to start with, so you would have to

1       raise, you know, hire an electrician, raise the  
2       electrical lines, et cetera.

3               And, let's see, this particular slide in  
4       the upper area is actually behind all of that  
5       conduit and steel I-beams upon which equipment  
6       rests is a base flashing.

7               There's a wall that's about seven or  
8       eight feet tall that has stucco on the interior  
9       face. And at the bottom of it, in order to raise  
10      that base flashing, which is only six inches, we'd  
11      have to cut the stucco.

12              Now I can't figure out how to get behind  
13      there to cut the stucco to raise that base  
14      flashing if I add more insulation in this  
15      instance.

16              So these are the kind of challenges that  
17      I have faced every day for the last 30 years.

18              The slide at the bottom shows actually a  
19      waterline going to a boiler that's mounted on the  
20      roof. You can see my tape measure in the lower  
21      right-hand corner, the yellow line there. And the  
22      waterline's maybe, I don't know, a couple inches  
23      off the surface of the roof. And that's got to be  
24      disconnected, drained, raised, reconnected. I  
25      need to hire a plumber to do that, I'm not a

1 plumber. So, that can get quite costly.

2 The other thing, too, is that  
3 disconnecting and reconnecting some of these  
4 items, since it can't be done in some instances on  
5 other facilities during the day, it has to be done  
6 on the weekend, which also gets into overtime  
7 costs for not just the roofer, but the plumber and  
8 the crane operator and everyone else. So, that's  
9 something to keep in mind.

10 And here, last but not least, is a  
11 insulated steam line. It's approximately six inch  
12 -- the joint on it is approximately six inches  
13 above the roof's surface. In order to raise that,  
14 if we added insulation, we would have to get a  
15 clad person to take the aluminum cladding off the  
16 pipe; the insulator to cut the insulation. We'd  
17 have to get a plumber to raise it. And then put  
18 it all back together again.

19 And then the last slide at the bottom is  
20 actually a duplicate. My daughter, who was  
21 helping me at midnight last night figure out how  
22 to do this, said, gee, mom, I thought you knew you  
23 had it in there twice.

24 I didn't, but regardless it just gives  
25 you a better overview of one of the gaslines

1       that's, you know, two or three inches above the  
2       surface of the roof and that would need to be  
3       raised.

4               So I really am a believer in being  
5       green. But I also am leery of situations in  
6       which, you know, everyone from insulation  
7       manufacturers to the government are saying, you  
8       know, you've got to -- you, building owner, have  
9       to spend an extra \$100,000 to address all these  
10      utilities in a retrofit situation.

11             But mainly I just wanted to thank  
12      everyone for listening and for looking at some of  
13      the real world conditions that often the models  
14      don't reflect, and that are very difficult to  
15      visualize if you don't spend every day on the roof  
16      like I do.

17             So, thank you.

18             CHAIRPERSON PFANNENSTIEL: Thank you,  
19      Ms. Dunham. Next we have Erik Emblem, Joint  
20      Committee on Energy and -- Environmental Policy,  
21      sorry.

22             MR. EMBLEM: Good morning, Madam  
23      Chairman, Distinguished Members of the Commission.  
24      I appreciate your allowing me the opportunity to  
25      address you. And I'm here to speak against the

1 new standards.

2 And I say that, and I'll talk to you  
3 about my area of interest and give you a little  
4 background.

5 I was here a couple months ago  
6 addressing you on a similar issue. Since that  
7 time we have formed this new Committee, and it's  
8 sponsored by the California Sheet Metal and Air  
9 Conditioning Contractors National Association,  
10 SMACNA and the California Sheet Metal Workers  
11 International Association of Local Unions. That's  
12 their employees.

13 There's 625 contractors, and 25,000  
14 workers. And their payroll annually is about \$3  
15 billion in the state. And they feel that they're  
16 major stakeholders when it comes to HVAC systems.

17 And I appreciate the last presentation.  
18 I started my apprenticeship in 1967, so I've been  
19 around awhile. I've the grey hairs to show you.  
20 But I spent two years on roofs like that. I did  
21 architectural metals. And that was like a horror  
22 story looking at that. And I remember those  
23 instances, the flashings and all that. There's a  
24 lot to this industry. There's a lot to the  
25 building industry.

1           I am born and raised in Santa Fe, New  
2 Mexico. I feel myself very environmentally  
3 friendly. There's not a smoke stack in Santa Fe.  
4 There's some chimneys that, we burn pinon wood.  
5 And even that we're trying to get rid of, but I  
6 love the pinon fireplaces.

7           But back to the issue on the code. The  
8 issue is very simple. We feel that reasonable and  
9 cost effective alternatives to the evaluation of  
10 HVAC duct systems and HVAC systems has not been  
11 considered in the code. That's it in a nutshell.

12           Now, we have written comment to this,  
13 and Bill, Mr. Pennington, was very gracious and  
14 called me about it and we talked about it. So  
15 none of this is personal. It has to do with an  
16 industry that is affected by this code, and their  
17 customers, which are ratepayers.

18           We feel, and when I say we, we in the  
19 industry feel that the standards, as they are set,  
20 even the 2005 standards, are not effective;  
21 they're not cost effective and they will not  
22 result in an energy savings.

23           We say that because 90 percent of the  
24 people in the retrofit market in the residential  
25 sector have decided not to even take a permit out

1 on their home. So I don't know how you can  
2 evaluate the effectiveness of your standard if 90  
3 percent of the people say we don't even want a  
4 permit.

5 And when we talk to our customers they  
6 say they don't want to have a permit because they  
7 don't see any value in it. In fact, what they see  
8 is a competitor contractor that's willing to come  
9 to them and say, look, we'll go in and we'll do an  
10 HVAC change-out for you for \$4500. But if you  
11 want to do an inspection, call one of the HERS  
12 raters in and all that, it's \$6500. And so the  
13 customer says, oh, well, we're not going to do  
14 that.

15 And we have some other information that  
16 kind of goes along with this in this regulation  
17 process. And it comes from the CEO of Copeland  
18 Compressors. Last year their manufacturing of our  
19 22 compressors increased in the State of  
20 California.

21 Now, that's kind of counter-intuitive if  
22 we have a program that says we want to get rid of  
23 those boogers, and we want to put in these R-410;  
24 we want to go to a better refrigerant to reduce  
25 CFCs, preserve the environment, and have more

1 energy efficiency.

2 But the truth is the customer has made  
3 the decision to change the compressor rather than  
4 upgrade the system, even when there's incentives  
5 and everything to go to the higher SEER units.

6 And it gets back down to some basic  
7 basic things. And I think that's what you're here  
8 for, and that's what I'm here for. The basic  
9 thing is what drives the industry is the consumer.  
10 And an educated consumer is going to purchase what  
11 they see value in. Energy savings, especially  
12 today, is something everybody sees value in.

13 We don't think that the customers are  
14 adequately served by this because you've left a  
15 big piece of the picture out of the equation.

16 Now, we've had a lot of input on this.  
17 Like I say, I started my apprenticeship in 1967,  
18 and so I've been around a few years. Before that  
19 my dad, after he returned from World War II, he  
20 started a sheet metal and heating and air  
21 conditioning business in Santa Fe. So when I was  
22 a little kid he had me out there cleaning the shop  
23 and sweeping floors and cleaning out the pickup  
24 trucks for the guys. So I've been around this for  
25 awhile.

1           What we have to do is we have to look at  
2     the people whose business it is to install, design  
3     and make sure that this equipment is running  
4     effectively. And we need to turn to them when we  
5     decide to come up with a system of evaluating to  
6     see if the evaluation is valid.

7           We feel strongly that the protocols that  
8     are put forth in Title 24 for the HERS rater on  
9     the evaluation of the duct pressure testing is  
10    bogus. And that comes from three practitioners in  
11    the state who have gone through the whole HERS  
12    process; who also used a SMACNA duct standards  
13    leak testing. And say, you know, when you walk  
14    away from a system and you've applied the protocol  
15    established in Title 24, that, you know, a full-  
16    grown tomcat can run through the leaks in that  
17    system. It's not valid.

18          The ducts are still leaking; the  
19    energy's still pouring out of the attics. We're  
20    not addressing the problem.

21          So it's not that we don't want to fix  
22    it. We need to fix it. But within the regulation  
23    there's holes. We had the HERS raters come to us,  
24    and when I say us I'm talking for the union side,  
25    want to become signatory. Because there's some

1 areas of the state where our contractors are  
2 prohibited from using nonsignatory HERS raters.

3 And they came to us and wanted to sign.  
4 When we looked into the situation we found out  
5 that they wanted to bring this workforce in that  
6 had gone through a two-day training class on how  
7 to apply a duct test.

8 And we talked to them about, well, what  
9 about do they actually -- they said they could do  
10 it in two hours. I said, you mean you actually go  
11 in the attic and you look and you test and you  
12 look again. They said, oh, no, they say most of  
13 the systems are inaccessible. Really? Yeah,  
14 they're 40 percent or more inaccessible, so we  
15 don't have to do that. So we just sign the  
16 certificate.

17 A guy goes in for an hour; he does a few  
18 things; checks this box, checks that box; and  
19 we're out.

20 And the sheet metal workers they didn't  
21 want to sign with an employer like that. Now,  
22 they want more members, and they'd like to have  
23 more dues. That's what they're granted with. But  
24 they don't want something that's bogus.

25 So, we'd like to work with you on

1 improving this. I think that part of what's  
2 happened, it was brought up here before us, is I  
3 think your building standards division is just out  
4 working their tail off. They're hard-working,  
5 dedicated people. Again, this is not personal.

6 But I think it was one of Coby's books;  
7 he talks about going up on top of the tree and  
8 make sure you're cutting in the right forest. We  
9 might be just cutting in the wrong forest and we  
10 need to come back and evaluate.

11 Now, I sat on a bank board for many  
12 years. And they had what they called the  
13 compliance audit. Two audits you went through in  
14 a bank; you had your safety and soundness audit,  
15 and you had your compliance audit. Your safety  
16 and soundness made sure you had enough money in  
17 the bank to fund the loans you have and to manage  
18 the deposits.

19 But then you had this compliance audit,  
20 and that's the one that made all of us crawl  
21 underneath our desks, when they came in and made  
22 sure you were doing everything the way you're  
23 supposed to do it, in accordance with regulations.

24 And maybe we need to look at that.  
25 Maybe it's something to consider here, is a

1 compliance audit. To make sure that we're  
2 addressing the needs of the people that we're  
3 serving. And that the ultimate goal is energy  
4 savings in a cost effective manner.

5 And that we bring in the stakeholders in  
6 the industry who have the customer base, who are  
7 putting these systems in, to work with you in  
8 coming up with a system to adequately test and  
9 make sure these systems are operating properly.

10 Now, the reason I say we're against the  
11 code, and that's probably kind of a big blank X,  
12 and that's probably not fair, because there's  
13 probably some good parts to the code. But I used  
14 to go to this mutual gains bargaining back in my  
15 collective bargaining days with a guy named Bernie  
16 Flaherty from Purdue University.

17 Now, Bernie Flaherty, he actually went  
18 to Ireland and tried to negotiate peace between  
19 northern and southern Ireland. This guy was a  
20 dynamic negotiator. And he said, you know, Eric,  
21 he says, sometimes in negotiations he says you  
22 reach what you call a batinum (phonetic), you got  
23 to have a batinum. And he says that's your best  
24 alternative to a negotiated agreement. He said  
25 that's the point where you just have to say, you

1 know what, we can't have an agreement, there's  
2 just nothing here.

3 And that's where we think we are with  
4 HERS today. We need to come back, and not the  
5 whole HERS process, but where they're evaluating  
6 HVAC systems, we need to look at that. We need to  
7 rework that.

8 And we stand here today saying we're  
9 willing to work with you. We appreciate Bill; I  
10 mean, Bill has reached out to us and it's nothing  
11 personal. But to my contractors and to the people  
12 I'm representing, they feel very strongly that  
13 this code, as it's written today and as it was  
14 written in 2005, left them out. They weren't  
15 considered, and their customers are not being  
16 handled with the way it is today.

17 Thank you for letting me talk,  
18 appreciate it.

19 COMMISSIONER BYRON: One quick question,  
20 if I may, --

21 MR. EMBLEM: Yes.

22 COMMISSIONER BYRON: -- Mr. Emblem?  
23 Earlier in your comments you made a remark along  
24 the lines that most customers are not going to  
25 pull a permit. I wanted to understand what you

1       were saying there.

2               MR. EMBLEM:  I worked with the HVAC  
3       reshaping group.  I sat on a lot of these  
4       committees with the PUC and CEC.  And the standard  
5       number they use out here is that 90 percent of the  
6       retrofit projects in the State of California  
7       residential and light commercial are not  
8       permitted.

9               COMMISSIONER BYRON:  Aren't they  
10      required to pull a permit?

11              MR. EMBLEM:  Yes, they are.

12              COMMISSIONER BYRON:  So are you  
13      suggesting they should not pull permits?

14              MR. EMBLEM:  No, absolutely not.  We  
15      support permits.  In fact, our contractor base,  
16      we've done some surveys, they're pulling permits.  
17      I mean it's a deep-rooted problem.

18              The problem is, is that it's getting by.  
19      And the regulatory and the compliance on the  
20      regulatory side is extremely deficient.  And there  
21      needs to be some problem solving on that.

22              But it gets back to, when I talk to the  
23      contractors, they say the problem is the end user,  
24      the person's home, the person's building that's  
25      being inspected, they don't see value.

1           We have horror stories where somebody  
2       would go in and an inspector would come in to  
3       inspect the HVAC system, and he found that they  
4       put a swimming pool heater in or something without  
5       a licensed electrician. Or that they'd modified  
6       the garage for their mother-in-law to stay there  
7       and hadn't pulled a permit.

8           So they went in there and found numerous  
9       other problems. And when a \$6000 air conditioner  
10      change-out turned into a \$20,000 or \$30,000 permit  
11      problem. And those kind of horror stories. And,  
12      of course, I've talked to people in Napa and they  
13      say, well, the next thing when you pull a permit  
14      is you have the tax assessor come down. And my  
15      taxes go up.

16           So there's perception problems. And I  
17      think it's an industry problem, it's more at the  
18      Building Standards Commission and the Licensing  
19      Board, but it needs to be fixed. And we support  
20      pulling permits.

21           COMMISSIONER BYRON: Yeah, good. I'm  
22      glad to hear that.

23           MR. EMBLEM: Yes.

24           COMMISSIONER BYRON: Thank you.

25           CHAIRPERSON PFANNENSTIEL: Thank you.

1                   COMMISSIONER ROSENFELD: Well, just a  
2 minute. Sir, I'm the first to admit -- I'm the  
3 first to admit that the permitting problem is very  
4 very serious. And the Committee is working on  
5 that. Ninety percent seems a little high, but  
6 when you've heard numbers like 70 or 80 percent,  
7 so you're on the right track.

8                   But what I can't quite get is we think  
9 the compliance on new buildings is, compliance is  
10 maybe 70 percent. I don't think we can have  
11 different codes for new and retrofit.

12                  It seems to me as if we have to stick  
13 with what we think is the right thing for new  
14 buildings, and work very hard on better  
15 compliance. But I don't hear you saying that we  
16 have to change the roofing rules for new. I hear  
17 you saying we have to have much better  
18 coordination for the next cycle, working on  
19 cooperation.

20                  MR. EMBLEM: Madam Chair, Commissioner  
21 Rosenfeld, I agree with basically what you're  
22 saying. I agree with you that codes and standards  
23 have to be for buildings. You can't differentiate  
24 between retrofit and new. And I do agree with you  
25 that on new construction, your building permit

1 vis-a-vis the building contractors, by and large,  
2 are the ones pulling the permits on the new  
3 construction project. And those are being put in  
4 and being inspected.

5 But the problem that we're having with  
6 energy and peak load use has to do with the  
7 residences and the existing buildings. So when we  
8 get back to energy, I think we have to look at  
9 existing residences. And we have to look at the  
10 testing methodology that we're using to test these  
11 systems.

12 I think it was the Procter Report that  
13 came out a few years ago that said, in his report,  
14 100 percent of the HVAC duct work in the State of  
15 California doesn't meet standards, new and  
16 retrofit. I'm not an absolute. We're bound to  
17 have a few good systems out there, but --

18 (Laughter.)

19 MR. EMBLEM: -- but I am going to say  
20 that by and large your inspection departments are  
21 under-staffed, under-capitalized, and can't do an  
22 effective job whether it's new or retrofit. And  
23 that's part of your systemic problem.

24 CHAIRPERSON PFANNENSTIEL: Thank you,  
25 Mr. Emblem, we agree with that.

1           MR. PENNINGTON: Could I make one  
2       comment here? I think there's some good news here  
3       related to these comments. There will be a report  
4       in front of you at the next business meeting  
5       related to addressing how to improve the energy  
6       efficiency of HVAC systems in existing buildings  
7       that was the result of a lot of industry effort to  
8       work together to come up with recommendations for  
9       how to make improvements on these issues,  
10      including the unlawful practice that's happening  
11      out there of failing to pull permits.

12           And I think there was a lot of good work  
13      associated with that report. And there's a lot of  
14      good ideas that are coming from the industry about  
15      how to kind of self-police, and how to, as an  
16      industry, recognize there's a problem and to try  
17      to address it.

18           And that's something that the Energy  
19      Commission tried to facilitate in the forum to  
20      develop that report. And we've been working with  
21      the PUC related to a big bold strategy that they  
22      have for trying to get after that problem. And it  
23      was actually the Energy Commission who advised the  
24      PUC that that should be one of their three big  
25      bold strategies.

1           So, you know, we appreciate the input.  
2       There's a lot of work that we can do on this. So,  
3       appreciate the comment.

4           CHAIRPERSON PFANNENSTIEL: Thank you,  
5       Bill. Bob Raymer, California Building Industry  
6       Association.

7           MR. RAYMER: Thank you, Madam Chair and  
8       Commissioners. I'm Bob Raymer, Technical Director  
9       and Staff Engineer for the California Building  
10      Industry Association.

11          And before I get into my comments I'd  
12      just like to say for the record that we support  
13      adoption today of the 2008 update. As we  
14      supported the 2002 and the 2005 update, we  
15      understand that California is trying to move  
16      forward in a very aggressive posture. And we've  
17      worked long and hard with staff to make sure that  
18      our concerns get addressed.

19          And so, with that, before I get into our  
20      comments, we are very supportive of today's  
21      adoption.

22          With that, in response to a comment made  
23      by Commissioner Byron, the fact of the matter is  
24      you absolutely have to get a permit for that  
25      change-out of the HVAC system. You've got some

1 significant electric hookups, as well as some  
2 plumbing hookups. Both of these would prompt the  
3 need for a permit.

4 The fact that it's not happening is  
5 something that we can address down the road, and  
6 will have to be addressed. But it should in no  
7 way influence today's adoption. And we'll look  
8 forward to working with CALBO and the Energy  
9 Commission Staff on the ways that we can seek to  
10 do that properly.

11 We would like to make some comments that  
12 kind of ring similar to what we've said at the  
13 2002 and 2005. We want to try and do our best to  
14 implement these new regulations as early as  
15 possible. That helps with the transition so that  
16 we, you know, we don't get to July of 2009 and all  
17 of a sudden everybody wants to start redesigning.

18 As a matter of fact, if we can, there  
19 are many builders that would be interested in  
20 complying today. What we need is the computer  
21 software needed to show compliance with the  
22 building departments, and for our own analytical  
23 tools.

24 For years we have been asking the CEC  
25 and the software manufacturers to provide us with

1 at least a 12-month lead in terms of availability.  
2 So, in essence, if these standards take effect in  
3 July of 2009, it would be great to have them prior  
4 to July of 2008.

5 And in addition to that, the CEC  
6 standards are directly referenced by HCD in their  
7 green building standards. So we're going to be  
8 moving forward with early application of all the  
9 provisions in HCD's green building standards,  
10 including the CEC regs.

11 So the sooner we can get those  
12 compliance tools the better that we can make the  
13 change, and the easier it's going to be on the  
14 local building departments who are very stressed  
15 right now.

16 And that leads into my second comment,  
17 once again we'd like to raise the cry for a very  
18 strenuous approach towards supporting training and  
19 education. We did a great job of that in the end  
20 of the 1990s and early 2000s. We've been very  
21 busy with lots of competing endeavors in the last  
22 three to four years, and training and education is  
23 beginning to take sort of a backseat. That's  
24 going to be very problematic over the next two to  
25 three years.

1                    Obviously, as has been mentioned by  
2                    several other speakers, these standards are  
3                    complex. So have the last sets of standards been  
4                    complex. That's really nothing new.

5                    What is new is that we've had an  
6                    economic downturn. And of the people that we have  
7                    trained to comply with the existing standards, I  
8                    have to tell you, about 70 percent of them, and  
9                    that's a very accurate number, about 70 percent of  
10                  the people we've trained will not be in that same  
11                  capacity when the new standards take effect.

12                  This is a huge problem. It's going to  
13                  create sort of a snowball effect with the poor  
14                  building officials trying to cover for this, as  
15                  well. So the extent that we can put a full-court  
16                  press on getting our subcontractors, the  
17                  manufacturers, the product purchasers, the site  
18                  superintendents, the building officials up to  
19                  speed and knowledgeable about compliance with  
20                  these regulations, the better.

21                  It's a huge push that we're going to  
22                  need to do over the next couple years. And like I  
23                  said, most, the lion's share of the people who  
24                  were trained to comply with the 2005 standards,  
25                  they're not going to be in those capacities when

1 the 2009 standards roll around.

2 We do have some issues with some low  
3 infiltration credits, but these are things that we  
4 can work out with staff in terms of a realistic  
5 applications out in the field down the road. It's  
6 nothing that should hold up adoption by you today.

7 And lastly, once again, we support  
8 looking at the existing housing stock. The Energy  
9 Commission did a great report in response to AB-  
10 549. And to the extent we can assist with those  
11 efforts, we would love to do that.

12 So, thank you very much.

13 CHAIRPERSON PFANNENSTIEL: Thank you,  
14 Bob. And we are continuing to work on those  
15 efforts, I know you're aware.

16 MR. RAYMER: Thank you.

17 CHAIRPERSON PFANNENSTIEL: Thanks very  
18 much. Reed Hitchcock, Asphalt Roofing  
19 Manufacturers Association.

20 MR. HITCHCOCK: Good morning, Madam  
21 Chair and Commissioners. My name is Reed  
22 Hitchcock; I'm the Executive Director of the  
23 Asphalt Roofing Manufacturers Association. We  
24 represent manufacturers of both steep-slope and  
25 low-slope asphalt roofing products.

1           First off I would just like to on the  
2       record express our sincere thanks to the CEC and  
3       recognize key staff and consultants for their  
4       substantial time and effort that's gone into this  
5       process, as well as the increased cooperative  
6       efforts with the stakeholders, like our  
7       organization.

8           Particularly Bill Pennington, Mazi  
9       Shirakh, Payam Bozorgchami, as well as Charles  
10      Eley and Jon McHugh. There's a lot of other  
11      folks, I know, that have been involved, but that's  
12      the team we've been working very closely with for  
13      this process.

14           Our organization is especially  
15      appreciative of the inclusion of quote-unquote  
16      "real world" exceptions, as well as compliance  
17      options in the 2008 code that achieved the same  
18      energy goals as the prescriptive requirements, but  
19      do result ultimately in more choice for the  
20      consumer, which is obviously all the more  
21      important as citizens -- I'm sorry, as attention  
22      turns to the residential application and impacts  
23      citizens in their homes.

24           Overall our organization sees the  
25      substantial reductions in energy use that will

1 result from the 2008 code as a very positive step.  
2 And we're committed to continuing to work with the  
3 staff on both the compliance manuals, as well as  
4 to achieve greater reductions in the future  
5 through cost effective new technologies, as well  
6 as sound application of products and measures that  
7 are available today.

8 So, thank you very much.

9 CHAIRPERSON PFANNENSTIEL: Thank you for  
10 your comments. Patrick Splitt, App-Tech,  
11 Incorporated.

12 MR. SPLITT: Hi, it's Pat Splitt from  
13 App-Tech. I'm an energy consultant from Santa  
14 Cruz. And I've been filing a lot of comments and  
15 concerns about these regulations.

16 And it turns out a lot of what I've  
17 filed for the 15-day language is identical to what  
18 I did on the 45-day. And that's because they seem  
19 to have been ignored, and I can't see how. So I'm  
20 just going to try to go through these quickly.

21 Starting with the Administrative  
22 Procedure Act, there's a section there, 10103(d)  
23 where all the responsibilities for building  
24 officials are supposed to be. And in all the  
25 other codes that they handle, they are used to

1 just looking in the administrative section to find  
2 out what their responsibilities are. And that's a  
3 section that we call out as where their  
4 responsibilities are.

5 But then if you look into the  
6 appendixes, and I've listed just one that I saw,  
7 NA-1.3.4, there's paragraphs of requirements for  
8 building officials. Well, it means nothing to  
9 them. Those are meaningless words unless you put  
10 them up into the administrative code, because  
11 they're administrating and you have to tell them  
12 what to administrate or forget it.

13 The next thing I'm commenting on is the  
14 calculation methods. I keep harping on this, that  
15 both the state administrative code for the  
16 Commission, and the Warren Alquist Act, require  
17 public domain computer programs for both res and  
18 nonres. There are none. Are none. Breaking the  
19 law.

20 I've been recommending that we remove  
21 the term public domain because it's obsolete. And  
22 I've started to rewrite that section of the  
23 administrative code to sort of go along with my  
24 ideas, but still in the current code the  
25 nonresidential program, even though it's not

1 public domain for the computer compliance, the  
2 Commission didn't come out until six months after  
3 the code went into effect.

4 Well I, or no one else that needs  
5 computer programs to do their work, can wait for  
6 six months after the code goes into effect. So we  
7 all had to go and spend \$1000 for the  
8 nonresidential program or whatever, to purchase a  
9 program. When we supposedly could have gotten one  
10 for cost from the Commission.

11 Well, once I'd purchased the program for  
12 \$1000, I'm not going to throw it away six months  
13 later when the Commission comes out with a  
14 program. So it was a complete waste of effort to  
15 do that.

16 And as far as I know for the residential  
17 program it still doesn't exist. It hasn't been  
18 approved yet as far as I know. I haven't seen  
19 that. And how long has it been since the code has  
20 gone into effect. That program's required by law.  
21 And the staff just routinely ignores the laws that  
22 they don't like to deal with, but they come down  
23 on people out trying to make a living because they  
24 don't obey their laws.

25 Well, I think they ought to meet their

1 laws first before they come down on us. That's  
2 hypocrisy.

3 So, I won't go over everything here, but  
4 there are a couple of points in here that I wanted  
5 to point out. One for 10109(a), I'm stating that  
6 these programs shall be certified. These are the  
7 programs that the Commission is supposed to be  
8 providing and made available to the general public  
9 at least 120 days before the effective date of  
10 2008 standards.

11 That's so people have them and have a  
12 chance to learn how to use them, be trained on  
13 them. And also these programs are supposed to be  
14 the reference programs for all the other  
15 compliance programs.

16 Well, if the reference program doesn't  
17 exist, how did these other programs get approved?  
18 When your law requires that they show that they  
19 come up with equivalent compliances to the  
20 reference program. So, got to change that.

21 Another thing I'm adding in section (b)  
22 is that the Commission shall also develop a  
23 procedure for assuring the ongoing quality and  
24 accuracy of these certified programs. And a  
25 timely correction of any reported calculation

1 errors. Correction of errors will not normally  
2 require recertification. If a vendor refuses to  
3 correct a program error, then the program  
4 shouldn't be certified.

5 Right now there's absolutely no method  
6 for keeping these programs up to date and fixing  
7 bugs. If I find an error in a program, I call up  
8 the hotline. They say, well, we don't deal with  
9 that; call up the vendor. Call up the vendor. He  
10 says, thank you very much, and does nothing.  
11 Nothing. They never correct them. Why? Because  
12 it's more work. Why should they? It's a  
13 certified program from the Energy Commission. The  
14 Commission has decreed that it's okay.

15 If they were to correct their program  
16 now they'd have to go and get it recertified.  
17 That's a big hassle. I mean, no one has thought  
18 about this, so it just doesn't happen. There are  
19 tons of bugs and people are aware of these bugs,  
20 can work them to make just about anything comply  
21 if you want to.

22 I can go in the nonresidential program  
23 and if I make a mistake and put in the wrong type  
24 of energy efficiency for an air conditioner, I can  
25 have the building comply easily. But if I go and

1       instead of just looking at the total, the result  
2       for the compliance margin, if I look up at the  
3       numbers that were added up to come up with that  
4       total, I find out that the cooling system was  
5       actually using negative energy. It's like a  
6       nuclear power plant there.

7               And it actually was putting energy into  
8       the building instead of taking it out. And it was  
9       because of some calculation error. And I reported  
10      that to the vendor. It's still there. There's no  
11      way of fixing this. It's stupid.

12             So, nobody has looked into this stuff  
13      and tried to work this all out to today's  
14      standards. All these regulations are back from  
15      when you put punchcards into the computer to get a  
16      result. Well, that's enough of that one.

17             I'll just run through these quickly  
18      here. Insulation. If quality insulation  
19      procedures have been shown to be a cost effective  
20      conservation feature, why are they not mandatory  
21      for all envelope insulation? This --

22             COMMISSIONER ROSENFELD: I didn't hear  
23      you. Well, what are they not mandatory for --

24             MR. SPLITT: All building, instead of  
25      being an option where you get credit for it. In

1 Santa Cruz, we don't have HERS requirements,  
2 nobody does this. If I told someone that was a  
3 client of mine, well, you know what, even though  
4 we don't have to do this, we can require it and  
5 then your installer will have to meet these  
6 standards.

7 And they'll get two different bids.  
8 They'll get one bid from the guy to do what they  
9 always do. And they'll get double that to do  
10 quality installation, which is basically just  
11 doing what he's supposed to be doing anyway.

12 I mean why shouldn't everybody do that?  
13 It doesn't make any sense. I mean it should just  
14 be mandatory. This would be a more effective and  
15 less burdensome method of reducing energy  
16 consumption than many of the other proposals in  
17 this rulemaking. Definitely.

18 There's a section there, 118(e)(2) that  
19 says for commercial buildings that you can't have  
20 a ventilated space under an insulated roof. What  
21 about residential? I mean shouldn't it be there?  
22 It should be. That should be there for  
23 everything.

24 There's a section 118(g) that had to do  
25 with -- I was complaining about the definitions of

1 insulation for slab-on-grade floors. That got  
2 fixed. But it was also mixed up before with some  
3 requirements for insulating for raised residential  
4 concrete floors. And that seemed to have just  
5 disappeared. Once upon a time there was some  
6 insulation requirements there, but they're gone  
7 now. They just fell out.

8           There's a definition for heated slab  
9 floor which is not correct. A radiant slab could  
10 be heated by any means, hot water pipes, hot air  
11 ducts, electric cables, et cetera. Right now the  
12 only thing that is considered a heated slab floor  
13 is one that has water tubes in it. You can put  
14 electric cables in and you don't have to put slab-  
15 edge insulation. Does that make any sense? No.

16           And these aren't the first times I've  
17 mentioned these. I've mentioned these before and  
18 they've just been ignored. How can they be  
19 ignored? This is common sense.

20           Ventilation. The section 121(b)(1)  
21 conflicts -- this is in the nonresidential  
22 ventilation section, it conflicts with residential  
23 section 150(o). Now we have mandatory mechanical  
24 ventilation for single family residences. But  
25 high rise and multifamily residences over three

1 stories are in a different section of the code,  
2 and there's no mechanical ventilation requirement.

3 Mechanical ventilation has to use more  
4 energy than just opening windows. So, if this is  
5 the Energy Commission, it must be that if they had  
6 a reason for requiring that, that it's some sort  
7 of health and safety requirement. That you're  
8 requiring mechanical ventilation in residential  
9 spaces because of the fear of the health and  
10 safety of the occupants.

11 Well, if you're doing that for a single  
12 family home that has windows all the way around,  
13 why wouldn't it be more important to do it in an  
14 apartment that only has windows on one end; that  
15 can't possibly get cross-ventilation. And is more  
16 concentrated as far as contaminants.

17 If any residential occupancy is going to  
18 have problems with indoor air quality, those are  
19 the ones that would have the problem. Yet, you  
20 ignore it. This doesn't make any sense. Either  
21 they all have to do it or none of them have to do  
22 it. I mean, I can't believe I'm still seeing this  
23 stuff.

24 There's a section on lighting controls  
25 that basically has to do with automatic lighting

1 controls when tailored method is used. But then  
2 it goes on to list no automatic lighting controls.  
3 So, that just should be thrown out of there. It's  
4 just a mistake.

5 There's a section that states that all  
6 load calculation programs have to be approved by  
7 the Commission. But as far as I know there is no  
8 list of approved load calculation programs.  
9 There's no place where a vendor can get certified.  
10 And there's no requirements as far as what you  
11 have to do to get certified. But yet it's  
12 required that it's to be certified. Well, either  
13 come up with a program or get that out of there.

14 Hydronic variable flow systems, section  
15 144(j)(1). There's no exception for systems like  
16 hydronic radiant or convective heating systems. A  
17 hydronic heating system could have dozens of  
18 fractional horsepower pumps that exceed the total  
19 1.5 horsepower limit that's been placed in here  
20 arbitrarily.

21 And also controls, score of control  
22 valves. And they mention pumps, but they don't  
23 say which pump has to be variable flow. Do all  
24 the pumps in the hydronic system have to be  
25 variable flow? Only some of them? Only one of

1       them? Only one, which one? None of that's in  
2       there. It's just gibberish.

3               Outdoor lighting, section 147. The  
4       overly complex section does not require plans for  
5       outdoor lighting. It has to. If you look  
6       through, or try to figure out the requirements,  
7       there's many overlapping areas that you have to  
8       define for outdoor lighting and light fixtures  
9       don't have to be necessarily in that area to have  
10      their light count for wattage in the area.

11             You come up with a list of areas that  
12      the building official cannot possibly look at and  
13      have any idea what was in the mind of the person  
14      that came up with those numbers. There's no way  
15      to check just forms. There has to be a cross-  
16      reference between those areas, and a drawing that  
17      actually shows where the areas are, which light  
18      fixtures go to which area. It's the only way that  
19      you can ever have this work. Without that you  
20      might as well throw the whole section out.

21             You do require this for indoor lighting,  
22      for daylight areas. The code does require that  
23      the plans indicate all the daylit areas. Well, if  
24      you do it for an indoor area where you've got  
25      walls and roofs and it's fairly easy to see what

1 space you're talking about, you really need it for  
2 outdoor. Because you don't have any walls to tell  
3 you, you know, where the line stops. It doesn't  
4 make any sense.

5 There's mandatory measures for  
6 residential section 150(j)(1)(A) that requires  
7 insulation for gas storage water heaters and  
8 indirect heated tanks. But not electric water  
9 heaters. I mean I have to insulate a gas water  
10 heater which is much more difficult to insulate  
11 because you have to -- out the combustion air and  
12 the vent collar, but I don't have to put extra  
13 insulation on an electric tank. Does that make  
14 any sense? No.

15 There's section 150(m)(10) doesn't allow  
16 porous inner core flexible duct. Well, there's  
17 duct work called acoustic duct that's used for  
18 sound attenuation. And there are many  
19 manufacturers, this is just one, J.P. Lamborne.  
20 This is a product that's used a lot. And you've  
21 just made it illegal. And I'm sure these people  
22 don't know about it, and they're going to be  
23 really upset once they figure out that you kind of  
24 put them out of business.

25 There are also section 151(f)(8)(E),

1       there are several flexible preinsulated piping  
2       systems available for buried waterpipes.  It's not  
3       possible to remove or replace the enclosed pipes  
4       from the sleeve as required by this section.  
5       Therefore, all these products are illegal.

6               And here, I have just one example here,  
7       but there's a lot of companies that make this  
8       stuff.  It's flexible pipe; you just open up a  
9       trench and roll this thing out.  It's cut to size;  
10      there's no joints.  These are all going to be  
11      illegal.  And I don't think they know about this,  
12      either.

13             In the appendixes, I won't get into all  
14      the appendixes, because they are very complicated,  
15      but there's one I just noticed this the other day.  
16      There's appendix RA-1 which seemed to be  
17      requirements for doing load calculations.

18             But they conflict almost completely with  
19      the residential requirements in section 150(h)  
20      that requires either ASHRAE or SMACNA or ACCA  
21      manual J.  This section forbids using anything  
22      other than the ASHRAE system.  That would make  
23      manual J calculations illegal.

24             It also forbids doing anything other  
25      than -- loads; it forbids room-by-room load

1        calculations.  It's ridiculous.  I mean this whole  
2        thing, I don't know where this came from.  It  
3        looks like maybe it was intended to be in the  
4        residential ACM manual, but it has no business  
5        being there and has nothing to do with load  
6        calculations for a building.  The whole thing has  
7        got to be deleted.  Has to be.

8                I've mentioned about life cycle cost  
9        analysis.  The manuals are not done yet.  In the  
10       manuals where everything is going to be determined  
11       as how you go about doing all these things that we  
12       in our regulations.  What you have to do.

13               If you don't know what you have to do to  
14       comply with a certain regulation, how can you know  
15       what that's going to cost?  So if you don't know  
16       the cost, what worth is your life cycle cost  
17       analysis?  It's either to make something show  
18       that's cost effective, you leave out half the  
19       costs.

20               And, again, the compliance manuals and  
21       procedures and forms.  It's the same thing with  
22       the forms.  The forms are basically supposed to be  
23       done with the ACM procedure.  Again, you're doing  
24       the forms before you've figured out what the  
25       process is, what the procedures are going through

1       this.

2               And all the meetings that we go to when  
3       we're supposedly thinking about these regulations  
4       we're just talking theory.  It isn't until the 45-  
5       day language comes out that we actually see what  
6       the Commission had on their mind.  And you still  
7       haven't gone through, until you get the manual,  
8       figure out what it is that you have to do.

9               And I'm sure for a lot of these things  
10       once everybody sits down around the table, tries  
11       to figure out what it is you have to do to do some  
12       of these things, they're going to say well, this  
13       is ridiculous.  We can't do this.

14              But it's too late, because you've  
15       already adopted the regulation.  And that's what's  
16       happened from the 2005 standards.  Got regulations  
17       that people say, well, this is BS, forget it.  
18       Happens over and over again.

19              And one thing I forgot to mention in the  
20       section on the code for computer programs is I  
21       have been harping about this problem of getting  
22       rid of the public domain requirements.  And it's  
23       going to take a change in the Warren Alquist Act.

24              And I've discovered that is going  
25       through the Assembly right now, actually went

1 through the Assembly. And AB-1065 is now in the  
2 Senate.

3 And I intend to try to amend that  
4 regulation to incorporate some of these other  
5 items that I put in here, like assuring that  
6 there's somewhere up-keeping the, upgrading the  
7 programs and keeping them maintained and making  
8 sure that those programs are available before the  
9 standards go into effect.

10 Someone around here has been trying to  
11 make sure I didn't know this was going on. I do  
12 know it's going on. I've been talking to the  
13 staff, and I'm going to propose an amendment to  
14 AB-1065 to make it more agreeable and more  
15 compatible with what the real world is.

16 And finally, all of these things that  
17 I've been harping on for a long time, the main  
18 problem is nobody thinks about implementation.  
19 It's all just regulation. Nobody thinks about  
20 implementation. What happens in the field. How  
21 do you actually do this stuff; how do you actually  
22 check it.

23 And what I've been trying to get you to  
24 do is to stop and figure that out, and then work  
25 backwards and say, okay, this is what we want to

1       have happen. What do we have to put in the  
2       regulations to do it. Instead of coming up with a  
3       bunch of regulations, and then after you put them  
4       into effect, then figure out, well, can we even do  
5       it at all. Doesn't make any sense.

6               So, some of these, sounds to me like  
7       you're planning on blowing right through this  
8       thing no matter what. And I'm not the only one  
9       that has commented on the 15-day language. There  
10      are a lot of other, I think, very good comments  
11      that should be addressed.

12             And if they're not addressed I think  
13      some of them are going to have to be addressed.  
14      And if the Commission goes ahead I think I will  
15      probably have to, probably along with some others,  
16      initiate an emergency rulemaking to change these,  
17      and get these items fixed.

18             And I think it would be a lot easier if  
19      you guys just continue this a little bit and try  
20      to get some of these items addressed now, rather  
21      than do it all over again.

22             CHAIRPERSON PFANNENSTIEL: Thank you,  
23      Mr. Splitt. We do have other comments.

24             MR. SPLITT: Very good, thanks.

25             CHAIRPERSON PFANNENSTIEL: Michael

1 Hindus from Tile Roofing Institute.

2 MR. HINDUS: Thank you. I'm Michael  
3 Hindus; I'm a partner with Pillsbury, Winthrop,  
4 Shaw, Pittman, and today I'm representing the Tile  
5 Roofing Institute, which is the official voice of  
6 the tile manufacturers who represent over 95  
7 percent of the tile, roofing tile, that's produced  
8 in North America. And thank you for providing the  
9 opportunity to speak today.

10 TRI has been active for the past two and  
11 a half years attending workshops, meeting with  
12 staff, and supplying technical studies supporting  
13 the energy efficiency of tile roofing. Tile is  
14 the leading product for roofing on new residential  
15 construction in California.

16 The Tile Roofing Institute respectfully  
17 requests today you delay the adoption of that part  
18 of proposed section 151 of the 2008 building  
19 efficiency standards that relate to prescriptive  
20 requirements for roofing materials in new  
21 construction, because it is based on what TRI's  
22 analysis determines are faulty engineering  
23 assumptions that will lead to significant  
24 financial losses for consumers in the building  
25 industry. And most importantly, which will not

1       achieve the desired energy savings.

2               So there are two reasons why I'm asking  
3       you to delay -- or the Tile Roofing Institute is  
4       asking to delay implementation of that part of  
5       section 151.

6               First, applying standards which permit  
7       dark asphalt and metal roofs to be used to meet  
8       prescribed codes only in climate zones 10 to 15,  
9       while tile roofs must conform in all climate zones  
10      is bad policy, contrary to customer demand, will  
11      never gain market acceptance, and unfairly  
12      penalizes the tile roofing industry.

13              And second, the staff's calculator  
14      inappropriately disregarded the air space option,  
15      which I'll describe to you, despite prior  
16      assurances that it was included.

17              So, first, the building standards  
18      erroneously require the tile roofs to meet  
19      prescribed standards in all climate zones while  
20      other roofing materials must meet prescribed  
21      standards only in zones 10 to 15.

22              Roofing material products such as  
23      asphalt shingle and metal roofing provide the  
24      greatest heating transfer to the attic area. And  
25      this results in the highest level of energy cost

1 to cool.

2           However, these materials are required to  
3 meet prescribed standards only in climate zones 10  
4 to 15. On the other hand, roofing tiles, which  
5 provide the greatest reduction in heat transfer  
6 and have the lowest energy cost are required to  
7 meet the prescribed codes in all 16 zones.

8           While the proposed restrictions have  
9 been unfairly placed on tile, which is the best  
10 performing roofing products for all zones, asphalt  
11 shingle and metal roofing are free to provide any  
12 color product in climate zones 1 through 9.

13           So, in climate zones 1 through 9 the  
14 darkest of colored asphalt shingle or metal would  
15 not be precluded by your new code provisions.  
16 While in contrast only lightly colored roofing  
17 tiles meeting a 15 percent reflectivity standard  
18 would be allowed.

19           And climate zones 1 through 9, of  
20 course, represent the largest population  
21 proportion of the California population. And if  
22 the shift by consumers to darker colored asphalt  
23 shingle or metal occurs, the result will be a  
24 significant increase in energy consumption and  
25 peak demand.

1               So we believe that the requirement that  
2       the standards apply to all 16 zones for roofing  
3       tile, but only to zones 10 through 15 for other  
4       forms of roofing has no logical or engineering  
5       basis.

6               And now I want to address the energy  
7       calculator that the staff has described to us.  
8       While the CEC has focused only on color  
9       reflectance of roofing materials for possible  
10      energy savings, the extensive research that the  
11      Tile Roofing Institute has submitted to the staff  
12      demonstrates that roofing tiles, by design,  
13      provide a natural thermal mass and ventilation  
14      principle called above sheathing ventilation, ASV,  
15      that will significantly reduce heat transfer  
16      regardless of the color of the tile.

17              In fact, research submitted by TRI in  
18      this docket has shown that ASV, alone, will out-  
19      perform other roofing materials in all 16 climate  
20      zones.

21              The Tile Roofing Institute was assured  
22      in discussions with CEC Staff and consultants that  
23      the air space option, that is ASV, was being  
24      included. However, the original prescriptive code  
25      language did not include such reference.

1           Then we also dug into the question of  
2           the calculator that the staff had used. And  
3           finally, on April 3, 2008, TRI was finally able to  
4           talk to CEC Staff about the specifics of the  
5           revised calculator.

6           We had previously been assured that  
7           staff believed that the air space was included in  
8           the calculator. When TRI actually talked to the  
9           developer of the calculator, discovered for the  
10          first time that the air space was not properly  
11          included, and that the tile roofing industry was  
12          being penalized for any roofing tile that does not  
13          meet color reflectance of at least 15 percent.

14          The calculator obviously is a vital tool  
15          to determine the actual cost saving alternatives  
16          for 98 percent of new construction. And it  
17          appears that no one outside of the consultant  
18          knows precisely what it includes.

19          And we think it's inconceivable that the  
20          CEC can make a decision based on such a flawed  
21          calculation.

22          TRI has offered its full assistance to  
23          CEC Staff and consultants to help complete the  
24          proper analysis of the research and development of  
25          the computer modeling.

1           In the interim we request that the CEC  
2   not adopt the standards relating to steep-pitched  
3   roofs based on an imperfect and potentially  
4   shifting model.

5           If the CEC keeps the prescriptive  
6   standards for tile roofing in all climate zones,  
7   then we believe it must also recognize the energy  
8   savings attributable to ASV.

9           So, in conclusion, we request that the  
10   CEC hold for further review the portions of  
11   section 151 pertaining specifically to steep-  
12   sloped pitch roofing sections for new residential  
13   construction until the staff can provide further  
14   details with respect to the above issues.

15           Thank you for your consideration.

16           CHAIRPERSON PFANNENSTIEL: Thank you,  
17   Mr. Hindus. Could we get the staff commenting  
18   both on the comment on the roofing that we just  
19   heard, and -- the TRI, their acronym, as well as  
20   other comments we've heard later -- or earlier  
21   today?

22           MR. SHIRAKH: Okay, on the tile  
23   questions the above sheathing ventilation is a  
24   topic that they have brought up repeatedly, and  
25   they want some credit for it, the ventilation that

1 takes place when you mount the tiles above a  
2 backing or a cross-backing.

3 And the industry proposed a certain  
4 credit that was based on an experiment done at Oak  
5 Ridge National Lab, and also some simulation  
6 models.

7 Unfortunately, in California when we  
8 tested it in a real house we could not verify or  
9 get the same results.

10 So what we have offered the industry to  
11 work with us even after the adoption to determine  
12 what the actual value is in a real house in  
13 California. And we're happy to work with them to  
14 determine that, and then incorporate it at some  
15 later time.

16 Related to requirements for different  
17 climate zones, what I need to mention is that for  
18 asphalt shingles the reflectance is .20, which is  
19 significantly higher than what the typical shingle  
20 is out in the market. On the other hand, the  
21 reflectance for tile is .15, instead of .20.

22 These requirements have been out there  
23 for over a year. And we've had several workshops,  
24 stakeholder meetings. I remember over a year ago  
25 in Hearing Room B, you know, we had this. And

1       this proposals have been out there and there was  
2       no objections until, you know, we released the 15-  
3       day language.

4               The data that we had at the time showed  
5       that a significant number of tile products, by  
6       their own admission about half of them, meet the  
7       .15 requirement. There are some very dark tiles  
8       that may have a problem meeting that .15  
9       requirement, you know, for new construction. If  
10      that's a problem they can use the performance  
11      approach and there's usually a very rather modest  
12      tradeoff they need to do in order to get those  
13      tiles installed. Again, we're talking about the  
14      hottest climate zones.

15             And the other point is that when we  
16      started this process, you know, we were hoping for  
17      really much higher, much more aggressive cool roof  
18      requirements. We started out with values for  
19      reflectance in the neighborhood of .35 or .30.

20             And through the years the negotiations  
21      with the industry we've compromised down to .15.  
22      And there's many, including Commissioner  
23      Rosenfeld, probably who feel we've gone as far as  
24      we can.

25             And so any further dilution of the

1 requirements would really, I think it would be not  
2 warranted at the time.

3 Related to the earlier comments by Mr.  
4 Splitt, he did provide the comments at the 45-day  
5 language. Mr. Splitt and CABEC, as an  
6 organization, they worked with the staff; they  
7 provided hundreds of comments over the past year  
8 and a half. We've worked with them. None of the  
9 comments have been ignored.

10 Many of their suggestions we accepted,  
11 they have found their way into the standards, the  
12 15-day language.

13 For the ones that we disagreed we have a  
14 prepared statement for every single one of them.  
15 And so, that would be part of the final statement  
16 of reason they asked for. Which, you know, would  
17 explain. We have to respond to every comment we  
18 receive, so we can't really ignore them, even if  
19 we wanted to.

20 So, we have, in this document, you know,  
21 kind of a point-by-point response to this and  
22 every other comment that will be addressed in it.

23 On the question of many of the points  
24 that he's bringing up related to the compliance  
25 software, these are related to the 2005 standards.

1 You know, we'll probably have to do a better job,  
2 you know, getting the compliance software programs  
3 in place. But I don't see why that should hold up  
4 the adoption today.

5 On the more specific questions he has on  
6 various chapters, you know, we have -- staff has  
7 gone over all of these comments with our  
8 contractors. I don't know if you want a point-by-  
9 point rebuttal, we could do that. Or we can  
10 discuss it in the FSOR when it comes up. But  
11 there is a reason for everything that we've done.

12 CHAIRPERSON PFANNENSTIEL: Thank you,  
13 Mazi. Commissioner Rosenfeld.

14 COMMISSIONER ROSENFELD: I have a  
15 question for Mazi and some friendly remarks about  
16 the tile roofing.

17 The one thing, Mazi, that Pat Splitt  
18 said that seemed like it could be fixed easily was  
19 he said that contractors need to be able to look  
20 for a checklist in one place in the document. And  
21 that there's still some requirements littered  
22 around in the appendices.

23 Will it be hard to put in a cross-  
24 reference, just adding a few words to the main  
25 list?

1           MR. SHIRAKH:  If I understand the  
2       comment correctly he was referring to section 10-  
3       103, the administrative section of the standards.  
4       And he had made this comment previously at the 45-  
5       day language.

6           And what he is saying is that all the  
7       building enforcement requirement must be all in  
8       one section, 10-103.

9           If you look at that section it's been  
10      almost completely revamped.  And we have done many  
11      of the things that he's suggesting.  But there are  
12      always other building enforcement requirement that  
13      are going to be in other parts of the code, in the  
14      reference appendices.  And we provide cross-  
15      reference as to NA-1 or RA-2 or RA-3.  And we have  
16      to use cross-references.  We can't just put  
17      everything all in one section.

18          And there's really no legal prohibition,  
19      and there's actually a lot of precedence for using  
20      cross-references within various standard  
21      documents.

22          But all of those, or most of those  
23      requirements are largely in 10-103 in the revised  
24      version.  And there are cross-references where,  
25      you know, we have to provide them.

1                   COMMISSIONER ROSENFELD:   Okay, thank  
2   you.   And just a remark.   Mr. Hindus, if I've got  
3   your name right, can you come back up for just a  
4   second?

5                   Let me make a couple of remarks about  
6   roofing tiles.   Let me say first that I'm a little  
7   bothered; this discussion sounds like it's a few  
8   years out of date.   That is, you mentioned the  
9   tiles are superior to asphalt shingles or to tin  
10   roofs because of their thermal mass.   And that's  
11   absolutely true.   And that's one reason that the  
12   reflectance value has only got to be greater than  
13   .15 instead of .2.

14                  But, there is a global warming problem.  
15   And it's a little bit ironic.   I just came back  
16   from a trip to China where I went to the trouble  
17   of visiting the Ministry of Construction to talk  
18   with them about requiring white tiles or cool  
19   color tiles throughout this huge Chinese market  
20   which is half the world's construction.

21                  And they're pretty interested in doing  
22   that to avoid CO2.   And they didn't bring up the  
23   issue that, oh, well, tiles are better than  
24   shingles and so they should have some exemptions.

25                  So I just want to make the point that as

1 far as reducing air conditioning loads, it's  
2 certainly true that thermal mass is an advantage.  
3 It's certainly true that the gap effect, the stack  
4 effect of the tiles is an advantage.

5 But in terms of global warming the fact  
6 that there's a stack effect under the tiles and  
7 the tiles don't run quite as hot as an asphalt  
8 roof just means you're getting better heat  
9 transfer to heat the world. It doesn't help with  
10 global warming at all.

11 So your problem with the modeling is --  
12 I didn't get around to reading your comments until  
13 late last night, but I did talk to Dr. Hashem  
14 Akbari at Lawrence Berkeley Lab. He thinks that  
15 the difference that Mazi talked about between Oak  
16 Ridge modeling and California modeling where the  
17 air is much drier in California, and there's more  
18 greenhouse effect is significant.

19 And I want to point out that that  
20 modeling should and can be done. And it doesn't  
21 depend on the adoption of the standards today.  
22 You should get good modeling, get an alternative  
23 compliance credit for that. And that can be put  
24 in at anytime that the modelers are happy that the  
25 good data are accurate.

1           So, I would definitely encourage your  
2       interest to do some experiments in California;  
3       well document each -- to the literature, and they  
4       should certainly be put into the alternative  
5       compliance.

6           MR. HINDUS: Thank you, Commissioner. I  
7       appreciate those comments and that encouragement  
8       because as you've noted, at the end of my remarks  
9       I said if we could get the modeling done properly  
10      then we could live with the climate zone  
11      restriction.

12           Thank you.

13           COMMISSIONER ROSENFELD: That's the end  
14      of the public comments?

15           CHAIRPERSON PFANNENSTIEL: That's all  
16      the blue cards I have on this subject. Okay.  
17      Anybody else have a comment?

18           COMMISSIONER ROSENFELD: I'm -- did I --

19           CHAIRPERSON PFANNENSTIEL: Yeah, there's  
20      somebody -- one other comment?

21           MR. FERRELL: Yes, ma'am.

22           CHAIRPERSON PFANNENSTIEL: Please come  
23      to the mike and identify yourself.

24           MR. FERRELL: My name's Jeff Ferrell. I  
25      work for the Division of Occupational Safety and

1 Health, that's Cal-OSHA. We've been working with  
2 staff over the last couple of years.

3 From the standpoint of worker health and  
4 safety and based on available research literature,  
5 the Division believes that demand control  
6 ventilation systems are still unproven. They're  
7 susceptible to component and control system  
8 failures that may result in inadequate  
9 ventilation.

10 We also continue to have concerns about  
11 how we will enforce the proposed language. One of  
12 our greater concerns is that there's not a good  
13 method for determining the outside air flow, what  
14 the outside air flow should be at any point, given  
15 point, in a multizone system, and what it actually  
16 is.

17 This is particularly a problem because  
18 it is our understanding that multizone systems,  
19 the DCV will be controlling the total air supply  
20 to the zone rather than controlling the amount of  
21 outside air directly.

22 During the 1970s in response to the  
23 energy crisis at that time engineers rushed to  
24 improve the energy efficiency of building HVAC  
25 systems. One of the simplest tactics adopted was

1 to dramatically reduce the amount of fresh air  
2 supply to building occupants.

3 This resulted in widespread instances of  
4 sick buildings syndrome; and moved indoor air  
5 quality issues to the forefront of worker health  
6 concerns.

7 The Division's goal has been to work  
8 with the Commission to help avoid any repetition  
9 of these unintended consequences.

10 The Division appreciates the efforts the  
11 Commission Staff has made to accommodate our  
12 concerns and look forward to working with them on  
13 the adoption of our current comments.

14 The changes that we're suggesting would  
15 help mitigate some of the negative effects that we  
16 expect will result from the increased use of  
17 demand control ventilation, particularly where  
18 this use is in more complex, multizone systems.  
19 However, we continue to believe that it is unwise  
20 to mandate the expansion of demand control  
21 ventilation to any workplace in a multizone  
22 building.

23 In order to protect employee health, as  
24 well as the health of the public, ventilation  
25 should not be reduced in occupancies in which

1       there is an increased risk of communicable disease  
2       transmission. It is also inappropriate to apply  
3       demand control ventilation to continuously  
4       occupied, dense office spaces. Therefore, again  
5       we suggest modifying exception 1 to section  
6       121(c)(3) as follows:

7               Classrooms, call centers, office spaces  
8       served by multizone system and that are  
9       continuously occupied during normal business hours  
10      with occupant density greater than 25 per 1000  
11      foot square; or 121(b)(2)(B), health care  
12      facilities and medical buildings and public areas  
13      of social services buildings are not required to  
14      have demand control ventilation, and shall not, at  
15      any time, reduce ventilation rates below what is  
16      required in section 121(b)(2).

17             If the Commission fails to make the  
18      changes we have proposed for exception 1, then at  
19      a minimum exception 3, which prohibits DCV  
20      ventilation reductions in spaces where there are  
21      sources of contaminants should be modified to  
22      acknowledge that biological contaminants, such as  
23      bacteria and viruses, must also be controlled with  
24      adequate ventilation.

25             Therefore, we again suggest modifying

1 exception 3 to section 121(c) (3) to read: Spaces  
2 that have processes or operations that generate  
3 dust, fumes, mist vapors or gases, and are not  
4 provided with local exhaust ventilation, such as  
5 indoor operation of internal combustion engines,  
6 or areas designated for unvented food service  
7 preparation, health care facilities and medical  
8 buildings, and public areas of social services  
9 buildings and beauty salons shall not install  
10 demand control ventilation.

11 Failure in CO2 sensors are a significant  
12 problem with demand control ventilation. DCV  
13 control systems must have the capability of  
14 determining when a sensor has failed or is in the  
15 process of failing.

16 Further, in the event of a component  
17 malfunction the system should default to supply  
18 the minimum outside air required in section  
19 121(b) (2). Therefore, section 121(c) (4) (F) should  
20 be changed to read:

21 CO2 sensors shall be certified by the  
22 manufacturer to be accurate within plus or minus  
23 75 ppm at 601,000 ppm concentration when measured  
24 at sea level and 25 degrees C. Factory  
25 calibrated, and calibrated at startup, and

1 certified by the manufacturer to require  
2 calibration no more frequently than once every  
3 five years.

4 Systems shall have self-diagnostic  
5 capabilities so that upon detection of sensor  
6 failure the system shall reset to supply the  
7 minimum quantity of outside air required by  
8 section 121(b) (2) to the zones services by the  
9 sensors at all times that the zone is occupied.

10 CO2-based DCV systems must respond  
11 before the level in 121(c) (4) (C) reach -- as the  
12 level in 121(c) (4) (C) should be the maximum  
13 average concentration in any occupancy.

14 Therefore, NA-7.551 should be changed to  
15 read, and this relates to bullet three of NA-  
16 7.551: DCV-control setpoint is sufficiently below  
17 the CO2 concentration by section 121(c) (4) (C) to  
18 insure that CO2 concentrations are maintained  
19 below the maximum permitted level at all times  
20 when the space is occupied.

21 Thank you.

22 CHAIRPERSON PFANNENSTIEL: Sir, have you  
23 submitted these comments in writing previously?

24 MR. FERRELL: Have I?

25 CHAIRPERSON PFANNENSTIEL: Yes. Or is

1 this the first time that staff is hearing them?

2 MR. FERRELL: No, I think we've been  
3 batting these issues back and forth for a long  
4 time.

5 CHAIRPERSON PFANNENSTIEL: These are not  
6 new issues? These are the same ones we've been  
7 working -- staff has been working on?

8 MR. FERRELL: Yes, ma'am.

9 CHAIRPERSON PFANNENSTIEL: Thank you.  
10 Then, Mazi, would you comment?

11 MR. SHIRAKH: Yes. On the issue of  
12 differences in semantics in a lot of -- for so  
13 many of the occupancies where, you know, OSHA  
14 finds them objectionable.

15 What we have is we have provided  
16 exceptions for those occupancies, like call  
17 centers, health care facilities, medical offices,  
18 clinics and so forth, what we say in exception 1  
19 that these spaces are not required to meet the  
20 demand control ventilation requirements.

21 What OSHA wants us to do is go actually  
22 beyond that and ban demand control ventilation  
23 from those ever being installed in those  
24 occupancies.

25 So, you know, we feel in Title 24 we've

1 done our job by exempting those spaces.

2 And the other problem is many of the  
3 spaces like health care facilities, clinics, parts  
4 of medical buildings may not even be under our  
5 jurisdiction.

6 So by imposing any kind of requirements  
7 on it, even, you know, his suggested language,  
8 that they shall meet such-and-such ventilation  
9 rates at all times, you know, we're probably  
10 getting into an area where we don't have  
11 jurisdiction. Again, as far as Title 24 is  
12 concerned, we've exempted.

13 The exception 3 that he's mentioning,  
14 you know, that's a little bit of different  
15 exception. Those are buildings that we definitely  
16 have jurisdiction over, and we have included  
17 certain occupancies like beauty salons, automotive  
18 repair shops, and we say you shall not install in  
19 those occupancies. So we've done that.

20 And when it comes to some of the other  
21 suggestions like sensors being capable of self-  
22 calibration or self-diagnostics, you know, we've  
23 talked to building engineers and manufacturers,  
24 and they're telling us -- and we've talked to  
25 folks who are leading our PIER research, with

1 Martha Brook.

2 And they're saying that we're not ready  
3 for these sensors yet. It may be possible. I  
4 mean, one of the things that they have done, to  
5 their credit, is really to put people on notice  
6 that they need to do a better job, both  
7 researchers and manufacturers. And they are  
8 responding.

9 So, you know, we are putting a very  
10 comprehensive PIER research together for the next  
11 round of standards. Again, Martha Brook is  
12 leading that. You know, we have researchers from  
13 LBNL and Iowa Energy Center. So a lot of these  
14 will be answered probably in the near future. And  
15 manufacturers are responding.

16 So we may be ready for some of these in  
17 the next round of standards, but the best  
18 information that we have today tells us that  
19 either the systems are not available, or they're  
20 going to have additional cost which we hadn't  
21 presented to the public through a public process.

22 So, we are where we are with this.

23 Related to the acceptance requirement in  
24 7.5.5, we've gone back and forth with OSHA. I  
25 think the language we have is very similar to what

1       they have. Again, you know, we have to fine tune  
2       it. So just sitting here without going back  
3       through I can't remember actually what the  
4       difference is between what we have. But we have  
5       responded to many of their comments and it is in  
6       there. We have expanded it greatly. And we do  
7       checking.

8               Some of the things they want is to test  
9       ventilation level at zone level. It's something  
10      that is very costly; it's very -- and we have  
11      presented that to the industry.

12             So we can monitor the ventilation air at  
13      the system level. But, you know, so many cfm is  
14      coming through the system. But how each molecule  
15      ends up in each space, that is something that  
16      requires a lot of instrumentation and monitoring.

17             So that's probably one thing we could  
18      not do, and we didn't include it in the acceptance  
19      requirements or in the standards. But we do have  
20      other requirements in the acceptance requirements  
21      that would monitor total ventilation air. And it  
22      monitors and records all that.

23             On the sensor failure, what we heard  
24      from the industry is that the current energy  
25      management systems, they can detect sensor

1 failure. So that's something they suggested and  
2 we've added to our code. So, if a sensor fails  
3 the energy management system can actually detect  
4 that and alert someone. And they can go take  
5 corrective action.

6 So, in --

7 CHAIRPERSON PFANNENSTIEL:

8 Commissioner -- oh, I'm sorry, go ahead.

9 MR. SHIRAKH: So we have, I think, done  
10 everything we can related to this.

11 CHAIRPERSON PFANNENSTIEL: Commissioner  
12 Rosenfeld, you had a comment on this?

13 COMMISSIONER ROSENFELD: One more  
14 question about sensor failure. I think OSHA used  
15 the words fail safe. That is if a sensor doesn't  
16 calibrate right, and fresh air -- you just used  
17 the word alarm. Is that okay with OSHA?

18 If an alarm goes off, is that -- or is  
19 there a difference of opinion there?

20 MR. SHIRAKH: Well, there is no such  
21 thing as a fail safe sensor. The sensors would  
22 fail, but our language would alert someone that,  
23 you know, someone --

24 COMMISSIONER ROSENFELD: Alert sounds  
25 pretty good to me.

1           MR. SHIRAKH:  -- that there is a failure  
2           and they can take corrective action.

3           MR. FERRELL:  Well, and our concern is  
4           that in the event of a failure that the default of  
5           the system would be to return back to the minimum  
6           air supply required.

7           MR. SHIRAKH:  And we have that provision  
8           in there.

9           COMMISSIONER ROSENFELD:  That's what I  
10          wanted to know.

11          CHAIRPERSON PFANNENSTIEL:  Thank you.

12          MR. SHIRAKH:  Yes.  So if there's a  
13          sensor failure, the system will go to minimum  
14          outside air.  That's the requirement.

15          MR. FERRELL:  And if I may, the language  
16          that we've suggested in exception 1, really we're  
17          not trying to expand the jurisdiction of CEC.  
18          What we're trying to do is make sure that we're  
19          dealing with medical occupancies, medical office  
20          spaces, places like that where in the event of  
21          pandemic flu or similar event, there would be a  
22          dramatically increased risk of disease  
23          transmission.  That under those circumstances the  
24          maximum amount of fresh air as required under the  
25          standard would be supplied.

1           We're not interested in banning DCV in  
2       those occupancies. What we're concerned about is  
3       down the line, after a building has gone through  
4       commissioning, and the occupancy changes.

5           Because what may be a retail space now  
6       may be a medical office space in ten years. And  
7       as the field enforcement people that are going to  
8       have to look into complaints related to these  
9       issues, we want to make sure that it's clear what  
10      the ventilation rates would be in those kind of  
11      occupancies.

12           COMMISSIONER ROSENFELD: I want to make  
13      a positive statement, I hope. Certainly I've been  
14      dealing with indoor air quality problems since  
15      1973 when we realized we had to tighten up leaky  
16      houses. And then we discovered radon and we  
17      discovered indescribable amounts of out-gassing of  
18      noxious things.

19           It seems to me, I've had long  
20      discussions with Mazi about, that we've done  
21      pretty well for this time. In three years there  
22      will be a revision of Title 24.

23           I strongly support PIER doing some  
24      experiments not only on the reliability of sensors  
25      and self-calibrating sensors and -- triple

1 sensors, but the idea of increasing fresh air in  
2 highly populated spaces.

3 A tiny remark. I think the present  
4 standard of having just so many cfm per person in  
5 occupied space, independent of the outside  
6 weather, is old fashioned. I think most of the  
7 time in California the outside temperature is  
8 mild. You can have lots and lots of outside air  
9 at no cost. You should have minimum outside air  
10 on a very cold day in Chicago, or on a very hot  
11 day in Bakersfield. But I don't think we run into  
12 -- at all. And I would hope that PIER will feed  
13 into much, PIER experiments will feed into much  
14 better use three years from now.

15 So, I thank you both very much. I'm --  
16 other comments from the Commissioners? Jeff?

17 COMMISSIONER BYRON: I do, Commissioner,  
18 have a brief comment. But if you're going to move  
19 the item, go right ahead.

20 COMMISSIONER ROSENFELD: Let me move the  
21 item, and then I encourage comments.

22 COMMISSIONER BYRON: If I may? I'd like  
23 to thank those that came today and provided  
24 comments. Those were very helpful and  
25 appreciated. Obviously demonstrate that

1 demonstration of doing these standards is  
2 extremely complicated.

3 In fact, I'm reminded that it takes even  
4 longer than the three years that we try and do  
5 these standards in oftentimes. And I think that's  
6 a statement about the effort of the staff to work  
7 through all these comments and the process that's  
8 involved here.

9 I had the benefit of a briefing on these  
10 standards by Mr. Shirakh and Pennington. And I  
11 understand that we are going to be also working  
12 more forcefully on increased compliance with our  
13 standards. And I'm really glad to hear that.

14 It's my belief that the staff has done a  
15 very good job here in addressing, a very thorough  
16 job in addressing comments. They've thoroughly  
17 briefed me and reviewed with me all the issues  
18 that would be raised today. And I'm satisfied  
19 that the comments have been addressed.

20 I think it's important that we move  
21 ahead with these standards, knowing full well they  
22 will be revised again. So I encourage all the  
23 stakeholders to participate in this process,  
24 continue to participate in this process in a  
25 meaningful way.

1                   My accolades to the staff. I think  
2                   you've done an excellent job. And I think your  
3                   tribute to the late Jon Leber is also very  
4                   fitting, and I congratulate you on that.

5                   So, I would like to second Commissioner  
6                   Rosenfeld's motion to approve these standards.

7                   COMMISSIONER ROSENFELD: And I wanted to  
8                   make one other comment to Pat -- forgotten your  
9                   last name -- Splitt, sorry, Pat.

10                  I got around to reading this about 11:00  
11                  last night, and by 2:00 in the morning I was sort  
12                  of bleary-eyed. I appreciate your comments, but I  
13                  wish they didn't come in at sort of two minutes  
14                  before the deadline, the night before the  
15                  meetings. Can we try to be a little more prompt  
16                  next time?

17                  MR. SPLITT: But they're essentially the  
18                  same comments I gave at that 45-day language that  
19                  I thought were important.

20                  CHAIRPERSON PFANNENSTIEL: Let me just  
21                  say that this item has been moved and seconded.  
22                  And then I got a last blue card from somebody who  
23                  would like to speak. So, may I ask you to speak,  
24                  and that you respect where we are in this process.

25                  MR. LEASE: Yes, hi. My name is Craig

1       Lease. I represent L&L Suppliers in Stockton,  
2       California.

3               Concerning the roof coatings of the  
4       gentleman whose samples were lost, and the SRI was  
5       added solar reflectance index was added. And it  
6       is all through the rulings at 64 where the initial  
7       reflective -- or after three year age reflectivity  
8       is supposed to be 55. At 64 that is the  
9       equivalent of 84 on reflectivity, initial  
10      reflectivity being 84.

11              One of my products is an 85 reflective.  
12      My gravel system that's lasted up to 48 years, is  
13      reflective at 81.

14              So in the formula you subtract  
15      essentially 20 points. So 85 minus 20 is 65,  
16      which would pass. And for my gravel system, being  
17      that it's up and down and multiple reflections, it  
18      comes in at 81. 81 minus 20 would be 61. And  
19      therefore, that would not be allowed at a SRI of  
20      64.

21              So I was going to ask the council or the  
22      Commission if it was possible to switch that to  
23      60. If it's too late at this point, at least I  
24      tried to --

25              CHAIRPERSON PFANNENSTIEL: I think you

1       need to work with staff, sir, and see what we can  
2       work on with that.

3               MR. LEASE:   That'd be fine.

4               CHAIRPERSON PFANNENSTIEL:   Thank you.

5               MR. LEASE:   Thank you so much.

6               MR. SHIRAKH:   Again, they can use the  
7       compliance -- the performance approach, and he'll  
8       actually get credit for the thermal mass of the  
9       rocks.

10              CHAIRPERSON PFANNENSTIEL:   Thank you,  
11       Mazi.

12              COMMISSIONER ROSENFELD:   Yeah, I think  
13       you're okay.

14              MR. LEASE:   Thank you.

15              CHAIRPERSON PFANNENSTIEL:   Before we  
16       vote on this let me just comment that I really do  
17       appreciate the incredible work that the staff puts  
18       into these updates.   There's a reason it takes as  
19       long as it does.   It's both very complicated and  
20       very comprehensive.

21              And I know that I've been pushing,  
22       pushing, pushing trying to get the standards  
23       adopted so that we can start capturing the savings  
24       that they're all about.

25              And I know that there are questions

1       about how much savings we really capture and it  
2       has a lot to do with the enforcement that we try  
3       to impose. And we need to do better on that. We  
4       need to make sure we are capturing every kilowatt  
5       hour and every therm that we say we're going to  
6       capture.

7               But having said that, I think that the  
8       process of working with the many stakeholders, and  
9       those many people who bothered to come here today  
10      and talk to us, is really important. I think  
11      that's how the process works. We need to make  
12      sure that it is something that the stakeholders  
13      have had some input in; we're not always going to  
14      agree.

15             But we need to make sure that we're  
16      using a valid professional technical base for the  
17      decisions we make.

18             Two points that were made earlier today  
19      I just want to stress. And one is about the need  
20      for training and education. I think that this is  
21      the really big place to look for green jobs in the  
22      future. We need to be doing this. We need to  
23      have the people out there who are able to work  
24      with us on compliance, on enforcement, on  
25      technical input, on installation. And this is a

1 very big part of what we're going to do.

2 And the last thing I would say is that  
3 there's a lot of, I think, very valid discussion  
4 about how consumers will be affected. And we  
5 know, because it's a requirement, that the  
6 standards must be cost effective.

7 But on the other hand we want to make  
8 sure customers understand what's happening; that  
9 they understand the choice; that they understand  
10 the value of this. And I think we all need to do  
11 a better job of that, to make sure that the  
12 efficiency that we're building into the new homes  
13 and the new buildings in California are ones that  
14 do make sense from the public. And we need to  
15 communicate that better.

16 With that, any further discussion or  
17 questions? No.

18 Moved and seconded.

19 All in favor?

20 (Ayes.)

21 CHAIRPERSON PFANNENSTIEL: Thank you,  
22 all.

23 Moving on --

24 (Applause.)

25 CHAIRPERSON PFANNENSTIEL: -- the